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Weighing the snow core to determine the water content

FEDERAL-STATE COOPERATIVE
SNOW SURVEYS AND IRRIGATION WATER FORECASTS
FOR OREGON

FEBRUARY 1, 1945

By

Division of Irrigation, Soil Conservation Service

United States Department of Agriculture

and

Oregon Agricultural Experiment Station

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DEPARTMENT OF AGRICULTURE

Data included in this report were obtained by the agencies named above in cooperation with the Oregon State Engineer, U. S. Forest Service, National Park Service and other Federal, State and local organizations.

INDEX TO SNOW COURSES

Number	Name	Elev.	Number	Name	Elev.	Number	Name	Elev.	Number	Name	Elev.
UPPER COLUMBIA DRAINAGE											
Lower Snake in Oregon											
OWHEE RIVER											
131	Big Bend	6800	212	Tollgate	5070	551	Breitenbush	2325	942	Silver Creek	4900
132	Buckskin, Lower	6800				552	Cascade Summit	4880			
133	Buckskin, Upper	8200				552	Champion	4500			
134	Fish Creek	7900				553	Hoag Pass	4755			
135	Fry Canyon	6800	222	Emigrant Springs	3925	553	McKenzie	4800	922	Mill Creek	6200
136	Gold Creek Renger Sta.	6600	223	Lucky Strike	5050	541	Mary's Peak	3620			
137	Granite Peak	8600	221	Meacham	4300	552	Santiam Junction	3990			
138	Jack Creek, Lower	7000	212	Tollgate	5070	521A	Waldo Lake	5500			
139	Jack Creek, Upper	7800	WILLOW CREEK								
140	Martin Creek	7000	241	Arbuckle Mountain	5400	831	Annie Spring	6018			
141	Rodeo Flat	7000				722	Billie Creek Divide	6000			
142	Silver City	6400	JOHN DAY RIVER			834	Chemult No. 1	4760			
143	South Mountain No. 2	6340				Calif.	Crowder Flat	5200			
144	Taylor Canyon	5200	241	Arbuckle Mountain	5400	723	Hyatt Prairie Reservoir	4900			
MAHEUR RIVER											
145	Blue Mountain Spring	5900	246A	Beech Creek Summit	4800	835	Lake of the Woods No. 1	4960			
146	Crane Prairie	5575	133	Blue Mountain Spring	5900	811	Quartz Mountain	5320			
147	Lake Creek	5120	141	Blue Mountain Summit	5098	7211	Seven Lakes No. 1	6800			
148	Rock Spring	5100	244	Dixie Springs	6650	7212	Seven Lakes No. 2	6200			
149	Stinking Water	4800	249	Gold Center	5340	837	Stewberry	5600	911A	Camae Creek	5720
BURNT RIVER											
150	Barney Creek	5950	964	Izee Summit	5295	841	Summer Rim	7200			
151	Blue Mountain Summit	5098	245	Olive Lake	6000	836	Sun Mountain	5550			
152	Dooley Mountain	5430	965	Snow Mountain	6300	842	Taylor Butte	5100	New.	Bald Mountain	6720
153	Tipton	5100	247B	Sterr Ridge	5150				972	Guano Creek	6480
FOWDER RIVER											
154	Anthony Lake	7125	DESCUTES RIVER								
155	Bourne	5800	326	Caldwell Ranch	4400	911A	Camae Creek	5720			
156	Dooley Mountain	5430	321	Cascade Summit	4880	811	Quartz Mountain	5320			
157	Dooley Mountain	5430	327	Cheriton Lake	5750	837	Strawberry	5600			
158	Gold Center	5400	361	Clear Lake	3500						
159	Summit Springs	6000	325	Crescent Lake	4760						
160	Taylor Green	5740	343	Derr	5670						
FINE CREEK											
161	Schneider Meadows	5400	351	Hogg Pass	4755						
IMNAHA RIVER											
162	Coverdale	4250	344	Marks Creek	4540						
163	Dooley Mountain	5430	324A	New Dutchman Flat	6400						
164	Dooley Mountain	5430	341	Ochocho Meadows	5200						
165	Gold Center	5400	965	Snow Mountain	6300						
166	Summit Springs	6000	342	Tamareck	4800						
167	Taylor Green	5740	331	Three Creeks Meadows	5600						
HOOD RIVER											
168	Schneider Meadows	5400	431	Brooks Meadows	4300						
SANDY RIVER											
169	Clear Lake	3500	1	Beatty	4300						
170	Phlox Point - Mt. Hood	5600	2	Chemult	4761						
171	Still Creek	3700	3	Chilbiquin	4187						
CLACKAMAS RIVER											
172	Clackamas Lake	3400	4	Crystel	4200						
173	Peevine Ridge	3500	5	Fort Klamath	4150						
174			6	Kirk	4533						
175			7	Lake of the Woods	4960						
176			8	Pelican	4200						
177			9	Quartz Mountain	5504						
178			10	Richardson Ranch	4800						
179			12	Yamsey	4600						
GOOSE LAKE BASIN											
180	Quartz Mountain	5504	9	Quartz Mountain							
INDEX TO THE CALIFORNIA OREGON POWER COMPANY SNOW WATER STATIONS											
KAMATH LAKE BASIN											
181	Beatty	4300									
182	Chemult	4761									
183	Chilbiquin	4187									
184	Crystel	4200									
185	Fort Klamath	4150									
186	Kirk	4533									
187	Lake of the Woods	4960									
188	Pelican	4200									
189	Quartz Mountain	5504									
190	Richardson Ranch	4800									
191	Yamsey	4600									
GOOSE LAKE BASIN											
192	Quartz Mountain	5504									
WEST COAST DRAINAGE											
UMPUQUA RIVER											
193	Champion	522									
194	Diamond Lake	743									
195	Gooleway Gap	726									
196	Gooleway Mountain	7215									
197	N.Umpqua near Lake Creek	742									
198	Trap Creek	741									
199	Whaleback	7217									
ROQUE RIVER											
200	Althouse	7216									
201	Annie Spring	831									
202	Big Red Mountain	729									
203	Billie Creek Divide	722									
204	Fish Lake	725									
205	Gooleway Gap	726									
206	Gooleway Mountain	7215									
207	Grayback Peak	727									
208	Hyatt Prairie Reservoir	723									
209	Little Red Mountain	7210									
210	Scrags Mountain	7220									
211	Seven Lakes No. 1	7211									
212	Seven Lakes No. 2	7212									
213	Silver Burn	7219									
214	Siskiyou Summit	728									
215	South Fork Canal	7218									
216	Wegner Butte	7213									
217	Whaleback	7217									

February 1, 1945

WATER SUPPLY OUTLOOK

Oregon's 1945 water supply prospect, as of this mid-winter date, is not good. Irrigated lands now having in sight "good" to "fair" water supplies are chiefly those served from reservoirs containing "hold-over" from 1944 run-off.

Mountain snow cover is now considerably below average on all snow courses but three in Oregon. Above-normal snow additions are needed during February and March if normal stream flow is to be produced. If snow-fall during the next two months is normal or less, generally below-normal stream flow during the irrigation season is expected.

Most watershed soil is not frozen and where frozen, is frozen only to shallow depth. Water content of surface soil, as indicated by samples in Southern Oregon only, appeared generally less than average in early November.

Total water stored in all reservoirs is 27 percent less than of similar date last year, 41 percent less than of this date in 1943, 34 percent less than in 1942, and is 82 percent of average. The number of reservoirs half full or better is the least for several years and is less than average.

Precipitation accumulated in Oregon valleys since October 1 is considerably below normal. The deficiency is nearly as great as for this same date in 1944, when accumulated valley precipitation was the least since 1937.

Preliminary forecasts of April-September stream flow, based on existing mountain snow cover, and on the assumption that snow cover increase during February and March will be average, prophesy a state-wide deficiency of run-off. Greatest deficiency is indicated for the Applegate River and Hyatt Prairie reservoir watersheds in Southern Oregon. The outlook for inflow to Ochoco and Crescent Lake reservoirs is nearly as poor. Prospects are relatively better elsewhere in the state but still are for below-normal run-off.

The following preliminary run-off forecasts are based on present mountain snow cover and on the assumption that average February and March increase of snow cover will occur. Greater or less than average increase in mountain snow cover during the next two months will correspondingly modify these estimates:

Area	Stream	Apr.-Sept., incl., Stream Flow Expectancy as of Feb. 1, 1945	
		As % of Avg. 1929-43	As % of Last Year
Northcentral	Mountain snow cover below average		
Umatilla- Walla Walla	S.Fk. Walla Walla R. nr. Milton		
	Station 214	79 d	a
	Umatilla R. at Pendleton (223)	76	a
Northeastern	Grande Ronde R. nr. LaGrande (1816)	67	a
	East Fk. Wallowa R. (1822 + 1823)	80	88
	Hurricane Cr. near Joseph (1814)	84	a
	Lostine R. near Lostine (1810)	84	a
	Bear Creek near Wallowa (1815)	81	a
Eastern	N. Fk. Malheur R. at Beulah (139)	62	a
	Malheur R. near Drewsey (1320)	56	a
	Strawberry Cr. nr. Prairie City (2434)	67 c	a
Harney Basin	Silvies River near Burns (966)	55	a
Central	Tumalo Cr. & C. S. Canal (338a)	74	a
	Squaw Cr. near Sisters (335)	73	a
	Odell Cr. near Crescent (3212)	83	100
	Crescent Lake Net Inflow	45	a
	Ochoco Reservoir Net Inflow	43	113
Southcentral	Deep Creek above Adel (9127)	64 b,f	a
Klamath Basin	Upper Klamath Lake Net Inflow	66	30
Southern	Rogue River above Prospect (722)	64	74
	Fourmile Lake Net Inflow	71	a
	N. Fk. Little Butte Cr. below Fish Lake (Natural flow) (7230)	75	a
	Hyatt Prairie Reservoir Net Inflow	31	a
	Applegate R. near Ruch (7212)	35	a
	N. Umpqua R. below Lake Cr. (7419)	81	85
	N. Umpqua R. at Toketee Falls (7414)	77	86
	Clearwater R. above Trap Cr. (7420)	83	84
Willamette Valley	McKenzie R. at McKenzie Bridge (534)	76	97
	McKenzie R. near Vida (535)	72	95
	Mid. Fk. Willam. R. at Eula (512)	73	a

a - 1944 Discharge record not available

b - April-June rather than April-Sept.

c - 1931-43

d - 1932-43

e - 1934-43

f - 1930-43

COMPARISON OF SNOW COVER AS OF FEBRUARY FIRST WITH THAT OF PREVIOUS YEARS

Snow-stored water now present above 5,000 feet:

As percent of that present one month ago -- 149
 As percent of that present one year ago -- 94
 As percent of that present two years ago -- 29
 As percent of average -- 55

Snow-stored water now present from 2,000-5,000 feet:
 As percent of that present one month ago -- 125
 As percent of that present one year ago -- 70
 As percent of that present two years ago -- 17
 As percent of average -- 39

Snow water content on 52 percent of all measured courses is less than at this time in 1944, and in 100 percent of the comparisons, is less than on about February 1 of 1943. Snow water content on 96 percent of all measured courses is less than average.

Given below is a tabulation showing inches snow-stored water for the February 1 record period on eleven scattered snow courses of greatest record length. The inferior snow pack of February 1, 1945, as compared with that of the same date in most earlier years is evident.

Snow Water Content (Inches) as of About February 1

River Basin	Deschutes-Willamette	Umatilla	Walla Walla	Burnt River	Malheur-John Day	Crooked Lake	Goose Lake	Klamath-Klamath	Rogue	Annie Spring	Diamond Lake
Snow Course	Cascade Summit	Meacham	Toll-gate	Aneroid Lake	Tipton	Blue Mt. Springs	Ochoco Mtns.	Quartz Mtn.	Chemult		
Year											
1929	23.2	9.2	-	7.7	10.1	-	4.3	4.0	6.5	20.3	8.9
1930	10.3	3.5	-	15.2	3.8	4.4	3.8	6.0	4.6	19.5	5.5
1931	11.2	6.2	14.1	13.0	8.2	3.6	5.6	4.0	6.1	N.R.	8.4*
1932	28.0	9.3	23.7	28.4	8.7	13.7	10.0	6.9	12.8	22.3	26.2
1933	27.8	5.6	N.R.	26.0	N.R.	13.0	6.5	5.9	11.1	N.R.	27.5
1934	N.R.	0.5	12.5	N.R.	N.R.	N.R.	N.R.	1.0	T	N.R.	5.6
1935	28.1	5.6	18.2	21.2	N.R.	11.0	9.4	7.7	8.6	33.4	7.6
1936	N.R.	11.2	27.8	17.3	N.R.	13.4	13.5	11.3	9.4	37.2	12.0
1937	25.1	9.3	16.6	9.3	N.R.	8.2	6.1	4.1	7.0	N.R.	15.6
1938	8.8	2.1	9.7	21.0	4.5	9.0	N.R.	N.R.	4.1	22.8	7.9
1939	17.4	4.0	14.1	13.4	6.8	7.4	5.7	2.2	5.3	26.5	12.2
1940	6.3	2.3	5.9	16.5	3.1	3.6	1.8	T	5.5	20.5	3.1
1941	13.5	4.0	14.1	19.3	8.7	13.4	8.6	5.0	8.1	36.8	10.5
1942	10.6	3.5	7.0	22.4	4.8	6.8	5.9	3.8	6.3	18.1	6.8
1943	37.0	10.6	28.8	28.6	13.4	23.0	13.7	9.4	20.5	40.8	29.8
1944	7.3	3.1	8.4	12.2	3.8	4.0	2.7	2.3	4.2	14.3	7.4
1945	8.7	4.6	8.2	12.8	8.2	4.9	4.7	4.8	3.7	13.4	4.5

Least February 1 water content is underscored.

N.R. - No report

T - Trace

* (Feb.15)

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STATUS OF SNOW COVER AS OF FEBRUARY FIRST
Summary of Snow Survey Data
by Watersheds as of About February First

Stream Basin	Number Of Snow Courses Averaged	Average Water Depth in Snow Cover (Inches)			Avg. Past Yrs. of Record	Yrs. of Rec- ord	1945 Snow Water Depth (Inches) as Percent of that in		
		1945	1944	1943			1944	1943	Avg.
Owyhee River	1	6.3	2.2				286		
	1	6.3		14.8				42	
	1	6.3			8.0	(4)			79
Malheur River	3	3.4	2.7				126		
	3	3.4		12.1				28	
	3	3.4			5.9	(7-14)			58
Burnt River	3	5.5	3.0				183		
	3	5.5		12.6				44	
	3	5.5			6.1	(6-11)			90
Powder River	4	4.4	3.7				119		
	5	6.1		19.1				32	
	5	6.1			9.0	(5-9)			68
Pine Creek	1	9.8	9.8				100		
	1	9.8		33.6				29	
	1	9.8			18.8	(7)			52
Grande Ronde River	6	7.6	7.2				105		
	7	8.3		23.6				35	
	7	8.3			13.5	(3-16)			61
Walla Walla River	1	8.2	8.4				98		
	1	8.2		28.8				28	
	1	8.2			15.4	(13)			53
Umatilla River	4	5.6	4.4				127		
	4	5.6		15.5				36	
	4	5.6			8.4	(6-16)			67
Willow Creek	1	5.2	3.7				140		
	1	5.2		10.6				49	
	1	5.2			7.1	(15)			73
John Day River	8	3.6	3.5				103		
	8	3.6		13.5				27	
	8	3.6			6.5	(6-15)			55
Deschutes River	4	5.3	6.8				78		
	3	6.5		34.7				19	
	4	5.3			14.2	(7-14)			37
Crooked River	3	3.6	1.9				189		
	3	3.6		11.3				32	
	3	3.6			5.0	(7-15)			72

Stream Basin	Number Of Snow Courses Averaged	Average Water Depth in Snow Cover (Inches)			Yrs. of Rec- ord	1945 Snow Water Depth (Inches) as Percent of that in		
		1945	1944	1943		1944	1943	Avg.
Sandy River	2	6.4	10.0			64		
	2	6.4		43.6			15	
	2	6.4			18.4	(7)		35
Clackamas River	1	2.7	3.7			73		
	1	2.7		25.5			11	
	1	2.7			8.4	(7)		32
Willamette River	7	4.3	4.5			96		
	7	4.3		28.2			15	
	7	4.3			11.0	(4-14)		39
Harney Basin	4	2.4	2.1			114		
	4	2.4		9.5			25	
	4	2.4			4.4	(9-12)		54
Silver Lake Basin	1	0.0	1.6			0		
	1	0.0		7.9			0	
	1	0.0			3.2	(5)		0
Warner Lake	1	5.0	3.8			132		
	1	5.0		16.4			30	
	1	5.0			7.2	(6)		69
Umpqua River	4	2.3	3.8			60		
	4	2.3		18.0			13	
	4	2.3			7.8	(6-16)		29
Upper Rogue River	12	5.7	7.4			77		
	9	3.3		14.4			23	
	12	5.7			10.3	(5-13)		55
Applegate River	5	4.4	10.8			41		
	5	4.4		19.1			23	
	5	4.4			14.3	(4-9)		31
Illinois River	2	2.0	6.1			33		
	2	2.0		12.3			16	
	2	2.0			8.6	(7-9)		23
Klamath Lake Basin	18*	5.1	6.1			84		
	15*	3.2		12.5			26	
	19*	4.9			8.2	(5-18)		60
Goose Lake Basin	4*	5.0	3.1			161		
	3*	5.0		11.6			43	
	4*	5.0			5.4	(6-15)		92

* Including Copco water measurement stations.

STATUS OF WATERSHED SOIL MOISTURE

Watershed soil is generally unfrozen. Greatest frost penetration into the soil, as measured on snow courses, is reported from Chemult as 8 inches.

Following are shown soil moisture contents existing October 25 to November 4, 1944, at Southern Oregon Watershed Soil Moisture Stations. Watershed soil moisture stations elsewhere in the State will next be sampled in March, 1945. Water content of surface soil, as indicated by these samples alone, appears generally less than usual.

Fall Soil Moisture as Percentage of Soil Dry Weight															
					Avg. for past yrs.										
					One year Ago					of Record					
					3-5 or		0-5 or		3-5 or		0-5 or		3-5 or		0-5 or
Location					Depth (ft.)	3-5 or	0-5 or	3-5 or	0-5 or	3-5 or	0-5 or	3-5 or	0-5 or	Yrs. of Rec-ord	
Sec. Twp. Range Elev.					Date	0-3	3-6	0-3	0-6	0-3	0-6	0-3	3-6	0-6	
1944															
UMPQUA RIVER					10-25	42.6	42.7	42.6	65.3	47.3	56.3	57.7	47.2	52.5	8
Whaleback															
ROGUE RIVER															
Annie Spring					11-4	30.1	15.8	23.0	15.4	9.5	12.4	22.0	14.1	18.0	8
Whaleback					10-25	42.6	42.7	42.6	65.3	47.3	56.3	57.7	47.2	52.5	8
Hyatt Prairie					10-28	24.3	40.6	32.5	32.1	50.3	41.2	31.5	48.8	40.2	7
Fish Lake					10-27	29.9	42.2	36.1	35.0	44.4	39.7	39.7	48.4	44.1	7
Siskiyou Summit					10-28	22.7	-	-	31.0	-	-	27.9	-	-	7
KLAMATH RIVER															
Annie Spring					11-4	30.1	15.8	23.0	15.4	9.5	12.4	22.0	14.1	18.0	8
Hyatt Prairie					10-28	24.3	40.6	32.5	32.1	50.3	41.2	31.5	48.8	40.2	7

STATUS OF RESERVOIR STORAGE AS OF FEBRUARY FIRST

In the following tabulation, water storage in acre feet in important Oregon reservoirs as of about February 1, 1945, is compared with storage as of approximately the same date in 1944, 1943, 1942, and with 10 year average, 1935-44.

Storage Reservoir	Stream Basin	Capacity Acre Ft.	Acre Feet in Storage				Average
			About 2-1-45	About 2-1-44	About 2-1-43	About 2-1-42	
Agency Valley	Malheur	60,000	41,880	40,762	24,300	44,520	31,603 ^h
Antelope	Owyhee	36,550	3,245	0	No report	6,500 ^a	4,136 ⁱ
Clear Lake	Lost River	440,240 ^b	228,310 ^b	293,340 ^b	252,030 ^b	249,380 ^b	159,507 ^b
Cold Springs	Umatilla	50,000	14,000	26,000	36,500	28,850	28,060 ^j
Cottage Grove	Willamette	30,000 ^b	210 ^b	0	0	-	-
Cottonwood	Goose Lake	4,160	355	0	0	-	0
Crane Prairie	Deschutes	50,000	24,240	43,720	30,000	17,470	30,182
Crescent Lake	Deschutes	80,000	31,000	51,790	30,000	21,260	32,436
Drew Creek	Goose Lake	62,500	28,500	35,000	42,794	49,500	31,712
Emigrant Gap	Rogue	8,200	1,590	1,534	5,628 ^c	6,468	4,740
Fern Ridge	Willamette	95,000 ^b	1,720 ^b	0	72,550 ^b	-	-
Fish Lake	Rogue	7,720	3,196	6,886	4,401	3,340	4,339
Fourmile Lake	Klamath ^d	14,000	6,741	11,516	3,802	2,894	6,730
Gerber	Klamath	94,000 ^b	34,220 ^b	44,650 ^b	39,320 ^{b,c}	43,380 ^b	36,976 ^b
Hyatt Prairie	Klamath ^d	16,000	1,630	6,513	8,607	5,880	5,257
McKay	Umatilla	74,000	21,440	36,800	51,720 ^c	55,670	25,460
Ochoco	Crooked	47,500	1,140	22,980	37,920 ^c	9,620	11,246
Owyhee	Owyhee	715,000 ^b	403,030 ^b	481,330 ^b	623,640 ^{b,c}	510,790 ^b	427,310 ^{b,1}
Thief Valley	Powder	17,400	8,464	8,954	15,140	13,900	11,207 ⁱ
Unity	Burnt	25,260	10,370	5,232	9,465	11,680	9,416 ^m
Upper Klamath	Klamath	583,900 ^f	187,800 ^g	305,600 ^g	466,300 ^{c,g}	411,200 ^g	376,382 ^g
Wallowa Lake	Wallowa	40,920	9,759	30,820	25,240	32,040	18,970
Warm Springs	Malheur	190,000	35,310	111,760	161,000	140,590	78,900
Wickiup	Deschutes	180,000	45,000	0	4,700	-	-
Willow Creek	Malheur	26,000	10,600 ^e	No report	11,600	No report	-

a-Estimated

b-Available for use

c-Water being by-passed to provide space for anticipated inflow

d-By ditch to Rogue River side

e-Approximate

f-Based on gage zero elev. of 4135.0

g-Based on gage datum 4135.0. Storage between datum 4135.0 and 4137.0 equals 118,600 A.Ft.

Between gage datum of 4135 and 4136 storage equals 59,100 acre feet.

h-1936-44

i-1937-44

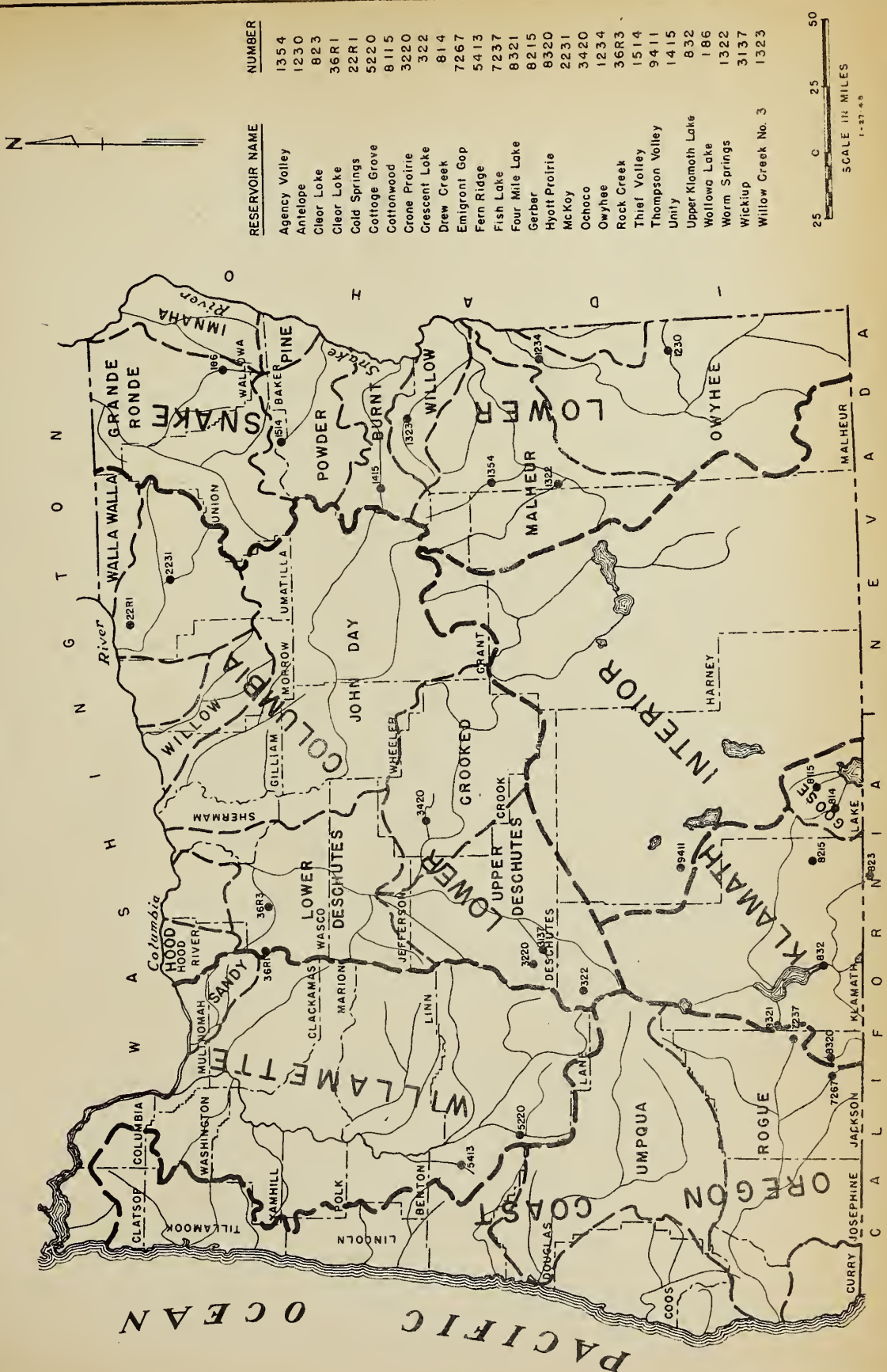
j-1940-44

k-Excl. '37, '38, '42

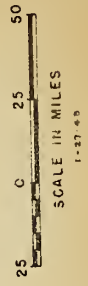
l-9 yr. average

m-1939-44

IMPORTANT OREGON RESERVOIRS



RESERVOIR NAME	NUMBER
Agency Valley	1354
Antelope	1230
Clear Lake	823
Clear Lake	3681
Cold Springs	2281
Cottage Grove	5220
Cottonwood	8115
Crane Prairie	3220
Crescent Lake	322
Drew Creek	814
Emigrant Gap	7267
Fern Ridge	5413
Fish Lake	7237
Four Mile Lake	8321
Gerber	8215
Hyatt Prairie	8320
McKey	2231
Ochoco	3420
Owyhee	1234
Rock Creek	3683
Thief Valley	1514
Thompson Valley	9411
Unity	1415
Upper Klamath Lake	832
Wallowa Lake	186
Worm Springs	1322
Wickiup	3137
Willow Creek No. 3	1323



STATUS OF VALLEY PRECIPITATION AS OF OCTOBER 1 TO DATE

Month	Oct.		Nov.		Dec.		Jan.		Period	
Section	P	D	P	D	P	D	P	D	P	D
S.E.	0.29	-0.39	1.80	+0.92	1.00	-0.17	1.2	-0.1	4.29	+0.26
S.C.	0.86	-0.11	2.76	+0.95	1.20	-0.92	0.9	-1.0	5.72	-1.08
N.C.	0.72	-0.04	1.45	-0.10	0.91	-0.52	0.9	-0.5	3.98	-1.16
Col. Riv.	0.44	-0.56	1.56	-0.12	0.72	-0.95	1.6	0.0	4.32	-1.63
Wal. Mts.	0.74	-0.70	1.54	-0.31	0.52	-0.86	1.2	-0.2	4.00	-2.07
Blue Mts.	0.61	-0.76	1.66	-0.08	0.87	-0.96	1.5	-0.3	4.64	-2.10
Southern	1.69	-0.32	3.42	-0.04	1.28	-2.56	2.4	-1.1	8.79	-4.02
Willamette	1.59	-2.57	5.90	-1.99	3.12	-5.38	5.5	-2.2	16.11	-12.14
Area	0.87	-0.68	2.51	-0.10	1.20	-1.54	1.9	-0.7	6.48	-2.99

P - Inches precipitation.

D - Inches departure from normal.

S.E. - Southeastern Oregon range lands, Harney and Malheur Counties.

S.C. - Southcentral Oregon range lands, Lake County and Klamath County, except the Cascade Mountains.

N.C. - Northcentral Oregon wheat and range lands, Crook, Deschutes, Jefferson, Wheeler and part of Grant Counties.

Col. Riv. - Columbia River area, wheat and range lands, Gilliam, Morrow, Sherman, Wasco and part of Umatilla Counties.

Wal. Mts. - Wallowa Mountain area, forest and range lands, Wallowa and part of Baker County.

Blue Mts. - The Blue Mountain forest and range area, Union and parts of Baker, Grant and Umatilla Counties.

Southern - Southern Oregon irrigated section, Jackson and Josephine Counties.

Willamette - Parts of Polk, Benton, Yamhill, Washington, Lane and all of Linn, Marion, Clackamas and Multnomah Counties.

Note: Data for the last month shown above are preliminary only, as they are based on a few stations only. Data for earlier months have been corrected to include all the stations in Climatological Data for the area.

STREAM BASINS

LOCATION

(Primary & Secondary
& Snow Courses) Oregon

Number Sec. Twp. Range Elev.

SNOW COVER MEASUREMENTS

About Feb. 1, 1945

Average Water Depth (Inches)		Yrs. for	
One	Two	Year	past
Month	Years	Ago	of
(1-1-45)(2-1-44)(2-1-43)		record	
Date (In.)		ord	

UPPER COLUMBIA DRAGON

LOWER SNAKE IN ORIGIN

OWYHEE RIVER

South Mountain No. 2	Idaho	35	7S	5W	6340	2-1	19.4	6.3	3.6	2.2	14.8	8.0	4
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MAIHEUR RIVER

Blue Mountain Springs	133	21	15S	35E	5900	1-29	18.3	4.9	3.3	4.1	23.0	9.6	14
Rock Spring	134	23	18S	32E	5100	1-28	11.6	2.7	2.0	1.8	3.3	4.6	9
Stinking Water	135	33	21S	34E	4800	Abt. 2-6	9.0	2.5	-	2.2	4.9	3.6	7

BURNT RIVER

Blue Mountain Summit	141	6	12S	36E	5098	1-29	14.3	3.4	2.0	2.5	12.4	5.4	10
Dooley Mountain	156	32	11S	40E	5430	1-30	18.5	4.8	3.2	2.8	12.0	6.0	6
Tipton	142	34	10S	35 $\frac{1}{2}$ E	5100	1-31	18.1	8.2	-	3.8	13.4	6.9	11

POWDER RIVER

Anthony Lake	155	18	7S	37E	7125	1-30	34.6	12.9	3.5	-	32.2	16.1	5
Bourne	154	33	8S	37E	5800	2-1	30.4	4.0	-	4.6	19.6 ^b	8.6	9
Dooley Mountain	156	32	11S	40E	5430	1-30	18.5	4.8	3.2	2.8	12.0	6.0	6
Eilertson Meadows	151B	18	8S	38E	5400	1-29	15.7	3.7	2.1	3.2	17.0	7.1	7
Gold Center	249	21	9S	36E	5340	1-31	23.1	4.9	3.5	4.3	14.5	7.3	6

PINE CREEK

Schneider Meadows	161	35	6S	45E	5400	1-30	38.8	9.8	-	9.8	33.6	18.8	7
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GRANDE RONDE RIVER

Aneroid Lake No. 1	183	16	4S	45E	7480	1-27	41.2	12.8	-	12.2	28.6	18.1	15
Aneroid Lake No. 2	183A	16	4S	45E	7000	1-27	30.9	8.3	-	9.3	27.1	17.8	3

b - Estimated.

STREAM BASINS		LOCATION		SNOW COVER MEASUREMENTS									
(Primary & Secondary & Snow Courses)	Oregon Number Sec. Twp. Range	Elev.	Date	About Feb. 1, 1945		Average Water		Depth		Yrs. of			
				Avg. Snow Depth (In.)	Avg. Water Depth (In.)	One Month Avg. (1-1-45)	One Year Avg. (2-1-44)	Two Years Avg. (2-1-43)	past yrs. of rec- ord				
GRANDE RONDE RIVER (Cont'd.)													
Anthony Lake	155 18 7S	7125 37E	1-30	34.6	12.9	3.5	-	32.2	16.1	5			
Beaver Reservoir	188 8 5S	5340 37E	1-28	18.2	3.9	1.6	3.4	11.8	8.4	6			
Camp Carson	187 33 6S	5970 36E	No Report			-	3.5	-	4.4	3			
Meacham	221 24&25 1S	4300 35E	1-30	18.5	4.6	-	3.1	10.6	5.6	16			
Moss Spring	186A 28 3S	5850 41E	1-31	28.6	7.6	4.1	7.0	26.0	13.4	7			
Tollgate	212 32 4N	5070 38E	1-29	28.1	8.2	-	8.4	28.8	15.4	13			
LOW ER C O L U M B I A D R A I N A G E													
WALLA WALLA RIVER													
Tollgate	212 32 4N	5070 38E	1-29	28.1	8.2	-	8.4	28.8	15.4	13			
UMATILLA RIVER													
Emigrant Springs	222 29 1N	3925 35E	1-30	17.2	3.5	-	1.7	9.0	5.4	16			
Lucky Strike	223 28 3S	5050 32E	1-27	24.5	6.0	-	4.5	13.5	7.0	6			
Meacham	221 24&25 1S	4300 35E	1-30	18.5	4.6	-	3.1	10.6	5.6	16			
Tollgate	212 32 4N	5070 38E	1-29	28.1	8.2	-	8.4	28.8	15.4	13			
WILLOW CREEK													
Arbuckle Mountain	241 33 4S	5400 29E	2-2	20.1	5.2	-	3.7	10.6	7.1	15			
JOHN DAY RIVER													
Arbuckle Mountain	241 33 4S	5400 29E	2-2	20.1	5.2	-	3.7	10.6	7.1	15			
Beech Creek Summit	246A 4 12S	4800 30E	1-30	8.4	1.6	1.4	3.2	7.6	3.9	8			
Blue Mountain Springs	133 21 15S	5900 35E	1-29	18.3	4.9	3.3	4.1	23.0	9.6	14			
Blue Mountain Summit	141 6 12S	5098 36E	1-29	14.3	3.4	2.0	2.5	12.4	5.4	10			
Gold Center	249 21 9S	5340 36E	1-31	23.1	4.9	3.5	4.3	14.5	7.3	6			
Izee Summit	964 28 16S	5293 29E	1-29	11.3	2.3	1.6	3.0	13.5	5.6	9			
Olive Lake	245 14 9S	6000 33½E	1-30	22.4	4.6	3.0	4.6	16.9	9.4	9			
Starr Ridge	247B 20 15S	5150 31E	1-29	8.1	1.7	1.4	2.4	9.3	3.8	9			

STREAM BASINS		LOCATION		SNOW COVER MEASUREMENTS									
(Primary & Secondary & Snow Courses)	Oregon Number Sec. Twp. Range Elev.	About Feb. 1, 1945		Average Water Depth (Inches)		One Year Ago		Two Years Ago		Avg. for past yrs. of record			
		Avg. Snow Depth (In.)	Avg. Water Depth (In.)	One Month Ago (1-1-45)	One Year Ago (2-1-44)	Two Years Ago (2-1-43)	Yrs. of record						
DESCHUTES RIVER													
Caldwell Ranch	326 30 21S 8E 4400	Report Delayed		-	3.2	-	3.8	5					
Cascade Summit	321 7 23S 6E 4880	2-1 27.0 8.7		-	7.3	37.0	18.2	14					
Charlton Lake	327 23 21S 6E 5750	Report Delayed		-	6.6	-	8.6	5					
Crescent Lake	325 11 24S 6E 4760	2-1 6.0 1.9		-	3.2	19.0	8.0	9					
Derr	343 14 13S 23E 5670	1-29 14.0 4.2		-	2.6	11.5	5.4	7					
Hogg Pass	351 24 13S 7½E 4755	2-4 32.0 9.0		7.0	12.4	48.0	19.7	7					
Marks Creek	344 25 12S 19E 4540	1-29 7.0 1.8		-	0.3	8.7	3.0	7					
Ochoco Meadows	341 21 13S 20E 5200	1-31 20.7 4.7		-	2.7	13.7	6.5	15					
Three Creeks Meadows	331 3 17S 9E 5600	1-30 7.3 1.6		-	4.1	-	10.7	13					
SANDY RIVER													
Phlox Point-Mt. Hood	452 6 3S 9E 5600	1-30 32.9 10.0		6.0	15.0	59.7	27.8	7					
Still Creek	451 25 3S 8½E 3700	1-31 20.0 2.9		-	5.0	27.6	9.0	7					
CLACKAMAS RIVER													
Peavine Ridge	591 14&15 6S 7E 3500	2-2 15.0 2.7		0.8	3.7	25.5	8.4	7					
WILLAMETTE RIVER													
Breitenbush	551 21 9S 7E 2325	2-1 3.0 0.7		0.0	0.2	14.6	4.4	4					
Cascade Summit	321 7 23S 6E 4880	2-1 27.0 8.7		-	7.3	37.0	18.2	14					
Champion	522 12 23S 1E 4500	1-30 12.4 3.2		-	4.4	30.1	11.8	6					
Charlton Lake	327 23 21S 6E 5750	Report Delayed		-	6.6	-	8.6	5					
Hogg Pass	351 24 13S 7½E 4755	2-4 32.0 9.0		7.0	12.4	48.0	19.7	7					
McKenzie	531 35 15S 7½E 4800	No Report		-	11.4	-	13.8	4					
Marion Forks	553 28 11S 7E 2730	2-4 1.9 0.6		1.0	1.4	19.2	6.8	4					
Mary's Peak	541 21 12S 7W 3620	1-25 12.4 4.1		-	2.0	19.4	4.3	5					
Santiam Junction	552 14 13S 7E 3990	2-4 11.7 3.9		2.0	3.8	29.1	12.0	4					
Waldo Lake	521A 15 21S 6E 5500	Report Delayed		-	6.1	-	7.4	5					

STREAM BASINS		LOCATION		SNOW COVER MEASUREMENTS										
(Primary & Secondary & Snow Courses)	Oregon Number	Sec.	Twp.	Range	Elev.	About Feb. 1, 1945		Average Water Depth (Inches)					Yrs. of rec- ord	
						avg. Snow Depth (In.)	avg. Water Depth (In.)	One Month Ago (1-1-45)	One Year Ago (2-1-44)	Two Years Ago (2-1-43)				
IN T E R I O R D R A I N A G E														
SILVER LAKE														
Silver Creek	942	25&26	29S	13E	4900	1-30	0.0	0.0	-	1.6	7.9	3.2	5	
HARNEY BASIN														
Idylwild Camp	961A	33	20S	31E	5200	1-31	12.1	2.8	1.9	1.2	6.9	3.8	12	
Izee Summit	964	28	16S	29E	5293	1-29	11.3	2.3	1.6	3.0	13.5	5.6	9	
Rock Spring	134	23	18S	32E	5100	1-28	11.6	2.7	2.0	1.8	8.3	4.6	9	
Starr Ridge	247B	20	15S	31E	5150	1-29	8.1	1.7	1.4	2.4	9.3	3.8	9	
WARNER LAKE														
Camas Creek	911A	5	39S	21E	5720	2-1	20.7	5.0	-	3.8	16.4	7.2	6	
UMPQUA RIVER														
Champion	522	12	23S	1E	4500	1-30	12.4	3.2	-	4.4	30.1	11.8	6	
Diamond Lake	743	29	27S	6E	5315	1-30	14.1	4.5	4.8	7.4	29.8	12.2	16	
Goolaway Gap	726	32	32S	3W	3000	1-28	1.4	0.2	-	1.3	4.8	2.1	8	
Goolaway Mountain	7215	30	32S	3W	3730	1-28	5.2	1.4	-	2.3	7.1	4.9	8	
ROGUE RIVER														
Althouse	7216	17	41S	7W	4400	1-29	3.0	0.8	-	0.6	2.8	1.9	7	
Annie Spring	831	19	31S	6E	6018	1-27	38.9	13.4	13.2	14.3	40.8	26.0	12	
Big Red Mountain	729	31	40S	1W	6500	1-29	21.9	6.6	-	12.7	22.4	17.1	9	
Billie Creek Divide	722	30	36S	5E	6000	1-29	24.5	9.5	5.4	8.3	-	14.2	13	
Fish Lake	725	3	37S	4E	4865	1-31	9.6	3.5	2.1	4.6	16.0	8.6	11	
Goolaway Gap	726	32	32S	3W	3000	1-28	1.4	0.2	-	1.3	4.8	2.1	8	
Goolaway Mountain	7215	30	32S	3W	3730	1-28	5.2	1.4	-	2.3	7.1	4.9	8	

STREAM BASINS

LOCATION

(Primary & Secondary
& Snow Courses) Oregon
Number

SNOW COVER MEASUREMENTS

(Primary & Secondary & Snow Courses)	Oregon Number	Sec.	Twp.	Range	Elev.	Date	About Feb. 1, 1945					Average Water Depth (Inches)			Yrs. of rec- ord		
							Avg. Snow		Avg. Water		One Year Ago (2-1-44)			Two Years Ago (2-1-43)		Avg. for past yrs. of rec- ord	
							Depth (In.)	Depth (In.)	Depth (In.)	One Month Ago (1-1-45)	Year Ago (2-1-44)	Years Ago (2-1-43)					
ROGUE RIVER (Cont'd.)																	
Grayback Peak	727	9	40S	5W	6000	1-31	12.9	3.2	11.6	21.9	15.3	9					
Hyatt Prairie Reservoir	723	15	39S	3E	4900	1-26	7.9	2.2	0.8 ^b	6.4	11.0	6.6	10				
Little Red Mountain	7210	25	40S	2W	6500	1-30	12.8	2.5	9.6	16.1	11.4	9					
Park Headquarters	838	8	31S	6E	6450	1-26	49.9	18.4	14.7	-	-	0					
Scrapp Mtn. (Calif.)	7220	9	47N	10W	6200	1-28	13.7	5.3	11.4	20.4	18.0	4					
Seven Lakes No. 1	7211	3	34S	5E	6800	1-29	47.8	17.5	20.6	-	23.1	5					
Seven Lakes No. 2	7212	26	33S	5E	6200	1-29	33.7	12.2	13.3	-	15.9	5					
Silver Burn	7219	30	30S	4E	3720	1-30	7.2	2.5	1.7	16.6	6.2	7					
Siskiyou Summit	728	17	40S	2E	4630	1-28	5.1	1.2	0.8	11.8	5.0	8					
South Fork Canal	7218	12	33S	3E	3500	1-30	3.0	0.8	Trace	7.4	1.6	7					
Wagner Butte	7213	1	40S	1W	6900	1-29	12.6	4.3	8.7	14.6	9.5	9					
KLAMATH LAKE BASIN																	
Annie Spring	831	19	31S	6E	6018	1-27	38.9	13.4	14.3	40.8	26.0	12					
Beatty 2/		22	36S	12E	4300	1-31	0.0	0.0	0.1	2.1	0.9	17					
Billie Creek Divide	722	30	36S	5E	6000	1-29	24.5	9.5	5.4	8.3	14.2	13					
Chemult No. 1	834	21	27S	8E	4760	1-31	10.7	3.7	-	20.5	7.6	8					
Chiloquin 2/		34	34S	7E	4187	1-31	0.0	0.0	0.2	3.8	2.3	15					
Crystal 2/		26	34S	6E	4200	1-31	7.0	3.2	3.8	8.2	6.2	15					
Fort Klamath 2/		22	33S	7 1/2E	4150	1-31	6.2	1.2	0.9	4.4	4.1	18					
Hyatt Prairie Reservoir	723	15	39S	3E	4900	1-26	7.9	2.2	0.3 ^b	11.0	6.6	10					
Kirk 2/		1	33S	7E	4533	1-31	4.5	0.8	2.1	9.0	5.2	18					
Lake of the Woods No.1	835	11	37S	5E	4960	1-31	10.3	3.3	3.8	13.2	5.2	8					
Park Headquarters	838	8	31S	6E	6450	1-26	49.9	18.4	14.7	-	-	0					
Pelican 2/		10	36S	6E	4200	1-31	4.0	1.1	0.6	9.0	3.8	18					
Quartz Mountain	811	2	38S	16E	5320	1-30	16.5	4.8	3.6	9.4	4.9	15					
Quartz Mountain 2/		33	37S	16E	5504	1-31	15.0	5.2	3.6	9.1	5.1	15					
Richardson Ranch 2/		22	35S	14E	4800	1-31	4.0	0.2	0.0	3.2	2.2	17					
Seven Lakes No. 1	7211	3	34S	5E	6800	1-29	47.8	17.5	-	20.6	23.1	5					

b - Estimated

STREAM BASINS	LOCATION	SNOW COVER MEASUREMENTS									
		About Feb. 1, 1945		Average Water		Depth		One		Two	
(Primary & Secondary & Snow Courses)	Oregon Number Sec. Twp. Range Elev.	Avg.	Snow	Avg.	Water	One	Year	Two	Avg.	for	
		Depth	(In.)	Depth	(In.)	Month	Ago	Years	past	of	
							</				

KLAMATH LAKE BASIN (Cont'd.)

Seven Lakes No. 2	7212	26	33S	5E	6200	1-29	33.7	12.2	-	13.3	-	15.9	5
Strawberry	837	4	40S	16E	5600	1-28	10.0	5.2	-	3.0	-	4.6	6
Sun Mountain	836	22	32S	7½E	5350	1-27	24.9	7.6	7.0	8.2	35.2	15.5	7
Taylor Butte	842	16	33S	11E	5100	1-24	5.4	1.5	-	2.3	8.2	3.4	8
Yamsey 2/		19	30S	11E	4600	No report		1.2	1.2	-	7.8	1.8	14

GOOSE LAKE BASIN

Camas Creek	9114	5	39S	21E	5720	2-1	20.7	5.0	-	3.8	16.4	7.2	6
Quartz Mountain	811	2	38S	16E	5320	1-30	16.5	4.8	3.6	2.3	9.4	4.9	15
Quartz Mountain		33	37S	16E	5504	1-31	15.0	5.2	3.6	3.3	9.1	5.1	15
Strawberry	837	4	40S	16E	5600	1-28	10.0	5.2	-	3.0	-	4.6	6

1/ The following organizations cooperate in the Oregon snow survey work:

STATE

Idaho Cooperative Snow Surveys
Nevada Cooperative Snow Surveys
Oregon Agricultural Experiment Station
Oregon State Engineer and corps of State Watermasters
Oregon State Highway Engineers

FEDERAL

Department of Agriculture
Forest Service
Soil Conservation Service
Department of Commerce
Weather Bureau
Department of the Interior
Bonneville Power Administration
Bureau of Reclamation
Fish and Wildlife Service
Geological Survey
Indian Service
National Park Service
War Department
Army Engineer Corps

PUBLIC UTILITIES

Eastern Oregon Light and Power Company
Portland General Electric Company
The California Oregon Power Company

MUNICIPALITIES

City of Corvallis
City of LaGrande
City of The Dalles

IRRIGATION DISTRICTS

Associated Ditch Companies
Central Oregon Irrigation District
Deschutes County Municipal Improvement District
Grants Pass Irrigation District
Jordan Valley Irrigation District
Lakeview Water Users Incorporated
Medford Irrigation District
Ochoco Irrigation District
Rogue River Irrigation District
Talent Irrigation District
Vale-Oregon Irrigation District
Warm Springs Irrigation District

PRIVATE CORPORATIONS

Amalgamated Sugar Company

2/ Water content determined by melting a measured sample.
(The California Oregon Power Company's station)

